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**United States Patent** [19][11] **Patent Number:** **5,806,078****Hug et al.**[45] **Date of Patent:** **Sep. 8, 1998**[54] **VERSION MANAGEMENT SYSTEM**[75] Inventors: **Richard A. Hug; Leon Presser**, both of Santa Barbara, Calif.[73] Assignee: **Softool Corporation**, Goleta, Calif.[21] Appl. No.: **257,816**[22] Filed: **Jun. 9, 1994**[51] **Int. Cl.<sup>6</sup>** ..... **G06F 15/00**[52] **U.S. Cl.** ..... **707/511; 707/203**[58] **Field of Search** ..... 364/419.19, 225.3,  
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203, 511[56] **References Cited****U.S. PATENT DOCUMENTS**

4,809,170	2/1989	Leblang et al.	364/200
5,231,577	7/1993	Koss	395/140
5,303,146	4/1994	Ammirato et al.	395/764

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A version management system for storing and retrieving changes to spreadsheet and word processor documents on a digital computer. The version management system is preferably integrated into the interface of existing spreadsheet or word processing software to permit a user to access a plurality of versions of spreadsheet or word processing documents. An original version of each document and all alternative versions are stored in a delta format, i.e., storing only the differences from a prior document version, in a common difference data file and version data file. A delta-formatted document will generally require less storage than an entire alternative version. Additionally, this delta formatting facilitates generating difference reports that emphasize the differences between multiple versions of a document. These difference reports are of particular value when applied to spreadsheet and word processing documents.

**29 Claims, 61 Drawing Sheets**